

Time : 3 Hrs.

**TEST - 1**

MM : 720

**[PHYSICS]**

Choose the correct answer :

1. If astronomical unit, parsec and light year are denoted by  $A$ ,  $B$  and  $C$  respectively then correct order of their magnitude is

(1)  $A > B > C$  (2)  $A < B < C$   
 (3)  $A < C < B$  (4)  $A > C > B$

2. Which of the following is/are main thrusts in physics?

(1) Unification (2) Reductionism  
 (3) Both (1) & (2) (4) Neither (1) nor (2)

3. Which of the following is shortest range force?

(1) Gravitational force  
 (2) Electromagnetic force  
 (3) Weak force  
 (4) Strong force

4. If  $x = a - b$  then  $\frac{\Delta x}{x}$  is equal to

(1)  $\frac{\Delta a}{a} + \frac{\Delta b}{b}$  (2)  $\frac{\Delta a}{a} - \frac{\Delta b}{b}$   
 (3)  $\frac{\Delta a}{a-b} - \frac{\Delta b}{a-b}$  (4)  $\frac{\Delta a}{a-b} + \frac{\Delta b}{a-b}$

5. If the percentage error in the measurement of surface area of a solid sphere is 4%, then percentage error in measurement of its radius and volume are respectively

(1) 2%, 6% (2) 2%, 8%  
 (3) 4%, 4% (4) 6%, 8%

6. If  $Z = \frac{A}{A-B}$  and  $A$  and  $B$  are measured with error  $\Delta A$  and  $\Delta B$  respectively, then relative error in  $Z$ , that is  $\frac{\Delta Z}{Z}$  is equal to

(1)  $\frac{\Delta A}{A} + \frac{\Delta A + \Delta B}{A-B}$  (2)  $\frac{\Delta A}{A} - \frac{\Delta A - \Delta B}{A-B}$   
 (3)  $\frac{\Delta A}{A} - \frac{\Delta A + \Delta B}{A-B}$  (4)  $\frac{\Delta A}{A} - \frac{\Delta A + \Delta B}{A+B}$

7. In the expression for time period  $T$  of simple

pendulum  $T = 2\pi\sqrt{\frac{l}{g}}$ , if the percentage error in time period  $T$  and length  $l$  are 2% and 2% respectively then percentage error in acceleration due to gravity  $g$  is equal to

(1) 8% (2) 2%  
 (3) 4% (4) 6%

8. When two resistors  $R_1$  and  $R_2$  are connected in parallel, then their parallel combination is given by

$R_p = \frac{R_1 R_2}{R_1 + R_2}$ . If error in measurement of  $R_1$  and  $R_2$  are  $\Delta R_1$  and  $\Delta R_2$  respectively then error in measurement of their parallel combination, that is  $\Delta R_p$  is equal to

(1)  $R_p^2 \left( \frac{\Delta R_1}{R_1^2} + \frac{\Delta R_2}{R_2^2} \right)$  (2)  $R_p \left( \frac{\Delta R_1}{R_1} + \frac{\Delta R_2}{R_2} \right)$   
 (3)  $\frac{\Delta R_1}{R_1} + \frac{\Delta R_2}{R_2}$  (4)  $\frac{\Delta R_1}{R_1} - \frac{\Delta R_2}{R_2}$

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$$4\pi r^2 = 4\%$$

$$2 \times \frac{\Delta r}{r} = 4\%$$

$$\frac{\Delta r}{r} = 2\%$$

$$3 \times 2 = 6\%$$

$$T = 2\pi\sqrt{\frac{l}{g}}$$

$$\frac{\Delta T}{T} = \frac{1}{2} \left( \frac{\Delta l}{l} + \frac{\Delta g}{g} \right)$$

$$2\% = \frac{1}{2} (2\% + \frac{\Delta g}{g})$$

$$4\% = 2\% + \frac{\Delta g}{g}$$

$$\frac{\Delta g}{g} = 2\%$$

$$\frac{\Delta A}{A} = \frac{\Delta A + \Delta B}{A-B}$$

$$\frac{\Delta A}{A} \times \frac{A}{\Delta A + \Delta B} = \frac{A}{\Delta A + \Delta B} \times \frac{\Delta A}{A}$$



9. If least count of an instrument is taken as absolute error then the relative error in the measurement of length 32.4 cm by a metre scale is

- (1)  $\frac{0.01}{32.4}$  (2)  $\frac{0.1}{32.4}$   
(3)  $\frac{1.0}{32.4}$  (4)  $\frac{0.001}{32.4}$

10. In a vernier callipers each main scale division is of one mm. Now if 10 vernier scale divisions coincide with 9 main scale divisions then the least count of the vernier callipers is

- (1) 1 mm (2) 0.1 mm  
(3) 0.01 mm (4) 0.001 mm

11. In a screw gauge the pitch is of one mm and the number of circular scale divisions is 20, hence the least count of the instrument is

- (1) 1 mm (2) 0.1 mm  
(3) 0.5 mm (4) 0.05 mm

12. Total number of significant figures in the measured value 0.004800 is

- (1) 6 (2) 4  
(3) 2 (4) 1

13. Which of the following quantities has the dimensional formula  $[ML^2T^{-2}K^{-1}]$ ?

- (1) Boltzmann's constant  
(2) Thermal capacity  
(3) Entropy  
(4) All of these

14. Which of the following pairs has same dimensional formula?

- (1) Pressure and angular momentum  
(2) Torque and impulse  
(3) Moment of inertia and force  
(4) Strain and Poisson's ratio

15. In a new system of units, unit of mass is  $x$  kg, unit of length is  $y$  metre and unit of time is  $z$  second. Now if 1 newton =  $F$  new units then  $F =$

- (1)  $\frac{z}{xy}$  (2)  $\frac{z^2}{xy}$   
(3)  $\frac{z}{xy^2}$  (4)  $\frac{z}{x^2y}$

16. If mass ( $M$ ), velocity ( $V$ ) and time ( $T$ ) are taken as fundamental units, then the dimensions of force ( $F$ ) are

- (1)  $[MVT]$  (2)  $[MVT^{-1}]$   
(3)  $[M^2VT]$  (4)  $[M^{-1}V^{-1}T]$

17. If force  $F$  acting on a particle as a function of time  $t$  is given as  $F = At + \frac{B}{t-C}$ , where  $A$ ,  $B$  and  $C$  are

constants then dimensional formula of  $B$  is

- (1)  $[MLT^{-2}]$  (2)  $[ML^2T^{-2}]$   
(3)  $[MLT^{-3}]$  (4)  $[MLT^{-1}]$

18. Choose the correct statement

- (1) A correct formula is dimensionally correct  
(2) A dimensionally incorrect formula is incorrect  
(3) A dimensionless quantity may have unit  
(4) All of these

19. If frictional force acting on a body is directly proportional to its velocity then the dimensional formula of constant of proportionality is

- (1)  $[MLT^{-2}]$  (2)  $[MLT^{-3}]$   
(3)  $[MT^{-3}]$  (4)  $[MT^{-2}]$

20. The physical quantity "Energy Density" has same dimensional formula as

- (1) Pressure  
(2) Stress  
(3) Young's modulus of elasticity  
(4) All of these

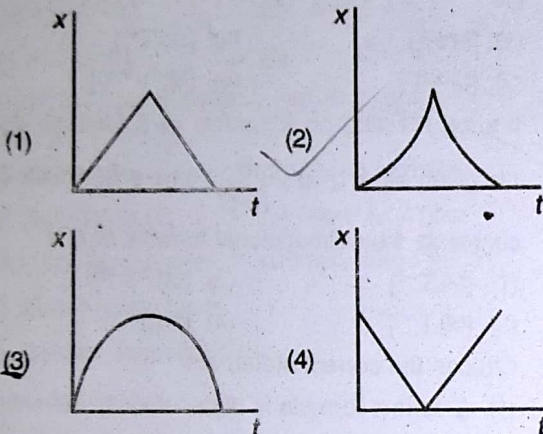
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## Test - 1 (Code-C)

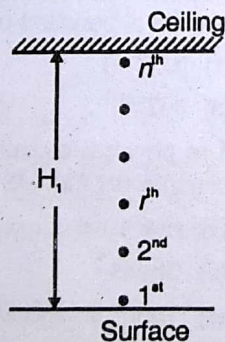
21. Choose the correct statement

- (1) In a straight line motion a particle can increase its velocity with decreasing acceleration  
 (2) In a straight line motion acceleration can revert its direction without its velocity reverting its direction  
 (3) A body at rest may be accelerated  
 (4) All of these

22. The position-time ( $x-t$ ) graph for a body thrown vertically upwards from ground is best shown by

23. Water drops are falling down at regular time intervals from ceiling such that when 1st drop is about to hit the ground the  $n^{\text{th}}$  drop is starting from the ceiling as shown. If  $H_1$  is vertical distance between the ceiling and the ground then the distance of  $r^{\text{th}}$  drop from the ceiling is given by

- (1)  $\frac{(n-r)H_1}{(n-1)}$   
 (2)  $\frac{(n-r)^2 H_1}{(n-1)^2}$   
 (3)  $\frac{rH_1}{n}$   
 (4)  $\frac{r^2 H_1}{n^2}$



24. A particle is dropped from rest and another particle is thrown downward simultaneously with initial speed  $u$ , then

- (1) Time after which their separation becomes  $\frac{h}{u}$   
 (2) Their relative velocity is always  $u$   
 (3) Their relative acceleration is always zero  
 (4) All of these

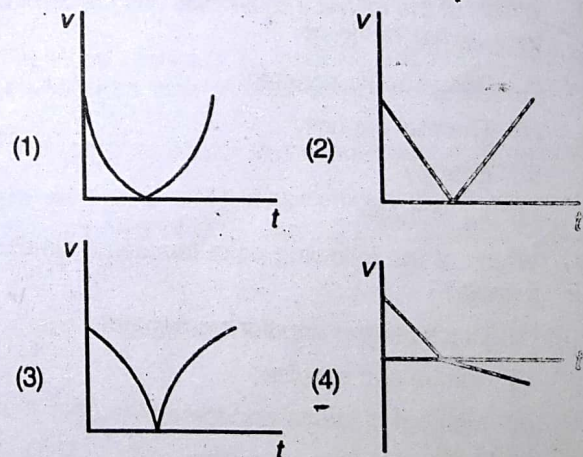
25. If a body is projected upward from certain height  $h$  with initial velocity  $u$ , then its speed at the ground level is

- (1)  $u$   
 (2)  $u + \sqrt{2gh}$   
 (3)  $\sqrt{u^2 + 2gh}$   
 (4)  $u + 2gh$

26. A body starts with initial speed  $u$  and moves in a straight line with constant acceleration. It has speed  $v$  after covering a distance  $2S$ . Its speed just after covering distance  $S$  is

- (1)  $\frac{u+v}{2}$   
 (2)  $\sqrt{uv}$   
 (3)  $\sqrt{u^2 + v^2}$   
 (4)  $\sqrt{\frac{u^2 + v^2}{2}}$

27. The velocity time ( $v-t$ ) graph for a body thrown vertically upward (which eventually comes down) considering constant air friction acting on it is best shown by



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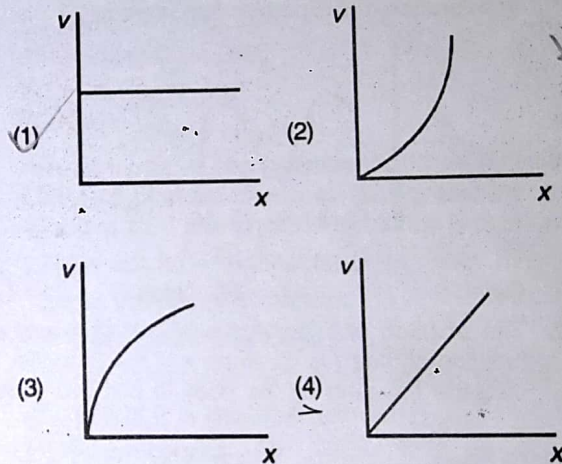


28. A car starts from rest with acceleration  $\alpha$  and then retards to rest with retardation  $\beta$  on a straight line, such that total time of journey is  $T$ . The distance covered by the car during this journey is
- (1)  $\frac{\alpha\beta T}{\alpha+\beta}$  (2)  $\frac{\alpha\beta T^2}{2(\alpha+\beta)}$
- (3)  $\frac{\alpha\beta T}{2(\alpha+\beta)}$  (4)  $\frac{\alpha\beta T^2}{(\alpha+\beta)}$
29. A body thrown vertically upward reaches its maximum height in time  $T$ . The body is at a height  $h$  (which is less than maximum height) at two instants of time  $t_1$  and  $t_2$ . Hence, product  $t_1 \cdot t_2$  is given by
- (1)  $\frac{h}{g}$  (2)  $\frac{2h}{g}$
- (3)  $\frac{4h}{g}$  (4)  $\frac{h}{2g}$
30. A body moves along x-axis with its position as a function of time  $t$  given as  $x = 3t^2 - 4t$ . Considering all SI units, the acceleration of the particle at  $t = 2$  seconds is
- (1)  $2 \text{ m/s}^2$  (2)  $4 \text{ m/s}^2$
- (3)  $6 \text{ m/s}^2$  (4)  $8 \text{ m/s}^2$
31. A particle is thrown vertically up with initial speed  $30 \text{ m/s}$ . Taking acceleration due to gravity as  $10 \text{ m/s}^2$ , the total time of flight of the particle is
- (1)  $8 \text{ s}$  (2)  $6 \text{ s}$
- (3)  $4 \text{ s}$  (4)  $2 \text{ s}$
32. The velocity of a particle moving along x-axis is given as  $v = 3x$ . Acceleration of the particle at  $x = 2 \text{ m}$  is (all quantities have SI units)
- (1)  $6 \text{ m/s}^2$  (2)  $12 \text{ m/s}^2$
- (3)  $18 \text{ m/s}^2$  (4)  $24 \text{ m/s}^2$

33. A car travels half of the length of straight line motion with a speed of  $60 \text{ km/h}$ . The remaining part of the distance is covered with speed  $40 \text{ km/h}$  for half of the time of remaining journey and with speed  $20 \text{ km/h}$  for the other half of the time. The average speed of the car for the entire journey is
- (1)  $30 \text{ km/h}$  (2)  $40 \text{ km/h}$
- (3)  $48 \text{ km/h}$  (4)  $45 \text{ km/h}$

34. A particle falling from rest under gravity covers a height  $H$  in 5 seconds. If it continues falling then next distance  $H$  will be covered in approximately
- (1)  $2 \text{ s}$  (2)  $3 \text{ s}$
- (3)  $4 \text{ s}$  (4)  $5 \text{ s}$

35. The acceleration ' $a$ ' of a particle moving along x-axis is given as  $a = 2x$ . Assume all SI units. The velocity-position ( $v$ - $x$ ) graph is best represented by



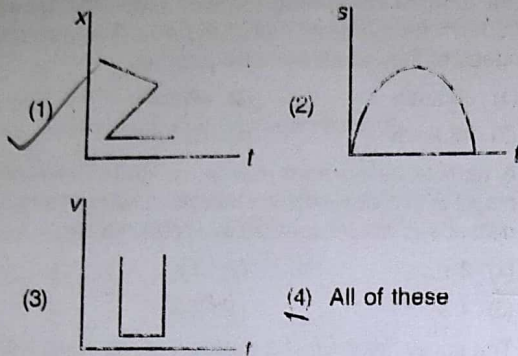
36. A vehicle moving with speed  $30 \text{ km/h}$  on a straight road can be stopped in  $6 \text{ m}$  distance by applying brakes. If same vehicle is moving with  $60 \text{ km/h}$  and brakes provide double retardation then vehicle will stop after travelling

- (1)  $6 \text{ m}$  (2)  $12 \text{ m}$
- (3)  $18 \text{ m}$  (4)  $24 \text{ m}$

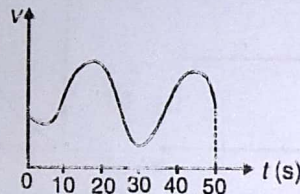
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37.. Which of the following graphs is not possible? Here  $x$ ,  $s$ ,  $v$ ,  $t$  represent position, distance covered, velocity and time respectively.



38. Figure shows the velocity of a particle moving on  $x$ -axis as a function of time  $t$ . How many times the acceleration of the particle becomes zero?



- (1) 2 (2) 3  
(3) 4 (4) Never
39. The position of a body moving along  $x$ -axis as a function of time  $t$  is given as  $x = t^2 - 2t$  metre. The distance travelled by the body in first two seconds is
- (1) Zero (2) 1 m  
(3) 2 m (4) 4 m
40. A particle is thrown vertically up with speed  $u$  so that distance covered in last second of flight is 35 m. If  $g = 10 \text{ m/s}^2$  then initial speed of throw is
- (1) 20 m/s (2) 30 m/s  
(3) 40 m/s (4) 50 m/s

41. The acceleration of a particle as a function of time  $t$  is given as  $a = k.t^{5/2}$ . If initial speed of the particle (at  $t = 0$ ) is  $u$  then its velocity  $v$  as a function of time  $t$  is given as

- (1)  $v = u + \frac{2}{5} k t^{5/2}$  (2)  $v = u + \frac{2}{7} k t^{7/2}$   
(3)  $v = u + k t^{6/2}$  (4)  $v = u + k t^{7/2}$

42. A body falls from rest under gravity and covers a distance 44.1 m in last one second of journey. If  $g = 9.8 \text{ m/s}^2$  then total time of fall is

- (1) 2 s (2) 3 s  
(3) 4 s (4) 5 s

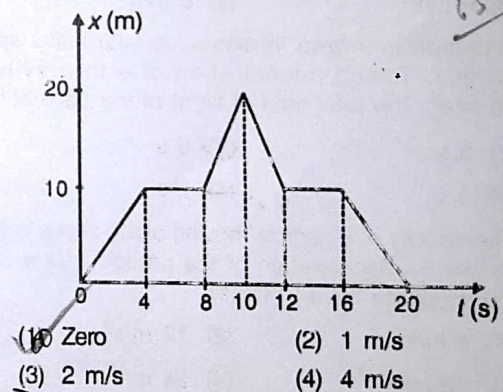
43. A juggler throws balls vertically up at an interval of 1 second. His maximum speed of throw so that six balls in air is ( $g = 10 \text{ m/s}^2$ )

- (1) 40 m/s (2) 30 m/s  
(3) 20 m/s (4) 50 m/s

44. A balloon is rising vertically up at constant speed 10 m/s. A stone is dropped from it when the balloon is at a height of 40 m. Total distance covered by the stone before reaching the ground is

- (take  $g = 10 \text{ m/s}^2$ )  
(1) 40 m (2) 45 m  
(3) 50 m (4) 60 m

45. The position-time ( $x-t$ ) graph of a particle moving along  $x$ -axis is shown. Average speed of the particle in  $t = 0$  to  $t = 20$  s is



- (1) Zero (2) 1 m/s  
(3) 2 m/s (4) 4 m/s

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**[CHEMISTRY]**

46. In which of the following measurements, the number of significant figures is infinite?
- A sample of orange juice contains 0.0108 g of vitamin C
  - A single hair has mass 0.0050060 g
  - The distance between two points was found to be  $5.030 \times 10^2$  m
  - In a bicycle race, 110 riders started but only 60 finished
47. Which of the following is the anti-cancer drug?
- Cis-platin
  - Trans-platin
  - AZT
  - All of these
48. What is the amount of  $\text{H}_2\text{SO}_4$  (in gram), required to react completely with 100 L of  $\text{NH}_3(\text{g})$  at NTP? (approx)
- 218.8 g
  - 980.15 g
  - 340.50 g
  - 170.25 g
49. What is the result of the following multiplication :  $4.56 \times 1.4 = ?$
- 6.384
  - 6.4
  - 6.38
  - 6.400
50. Consider the following reaction sequence:
- $$\text{CaCl}_2(\text{aq}) + \text{CO}_2(\text{g}) + \text{H}_2\text{O} \rightarrow \text{CaCO}_3(\text{s}) + 2\text{HCl}(\text{aq})$$
- $$\text{CaCO}_3(\text{s}) \xrightarrow{\text{heat}} \text{CaO}(\text{s}) + \text{H}_2\text{O}(\text{g})$$
- If the percentage yield of the 1st step is 80% and that of the 2nd step is 75%, then what is the expected overall percentage yield for producing CaO from  $\text{CaCl}_2$ ?
- 50%
  - 70%
  - 55%
  - 60%
51. Consider the following reaction of sodium thiosulphate with  $\text{Cl}_2$  :
- $$\text{Na}_2\text{S}_2\text{O}_3(\text{aq}) + 4\text{Cl}_2(\text{g}) + 5\text{H}_2\text{O}(\text{l}) \longrightarrow 2\text{NaHSO}_4(\text{aq}) + 8\text{HCl}(\text{aq})$$
- Choose the correct statement
- 0.3 mole of  $\text{Na}_2\text{S}_2\text{O}_3$  is required to react completely with 0.12 mole of  $\text{Cl}_2$
  - 0.24 mole of HCl will form from 0.12 mole of  $\text{Cl}_2$  on complete reaction
  - 1.5 mole of water is required for the reaction of 0.12 mole of  $\text{Cl}_2$
  - All are correct
52. Which of the following has maximum percentage of nitrogen by mass?
- Morphine :  $\text{C}_{17}\text{H}_{19}\text{NO}_3$
  - Heroin :  $\text{C}_{21}\text{H}_{23}\text{NO}_5$
  - LSD :  $\text{C}_{20}\text{H}_{25}\text{N}_3\text{O}$
  - Phencyclidine :  $\text{C}_{17}\text{H}_{25}\text{N}$
53. In a synthesis of phosphorous trichloride by mixing 12.0g of phosphorous with 35.0g chlorine gas, 45.2 g of solid phosphorous trichloride is obtained:
- $$2\text{P}(\text{s}) + 3\text{Cl}_2(\text{g}) \longrightarrow 2\text{PCl}_3(\text{s})$$
- Choose the correct statement
- $\text{Cl}_2$  is the limiting reagent
  - The percentage yield of the reaction is 90%
  - 10 g of P is remained unreacted
  - All are correct
54. Chlorophyll, the green pigment in plants has the molecular formula  $\text{C}_{55}\text{H}_{72}\text{MgN}_4\text{O}_5$ . If 0.012 g of Mg is available to a plant for chlorophyll synthesis, how many grams of carbon will be required to completely use up the magnesium? [C = 12, H = 1, Mg = 12, N = 14, O = 16]
- 0.33 g
  - 0.66 g
  - 0.99 g
  - 1.35 g

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Test - 1 (Code-C)

All India Aakash Test Series for Medical-2017

55. In a sample of calcium phosphate,  $\text{Ca}_3(\text{PO}_4)_2$ , 0.432 mole of phosphorous is present, what is amount of calcium phosphate is present in the sample if the sample is 100% pure? [Ca = 40, P = 31, O = 16]

- (1) 98 g (2) 120 g  
(3) 67 g (4) 34 g

56. Empirical formula of a compound is  $\text{CH}_2\text{O}$ . The molecular formula of the compound cannot be

- (1)  $\text{CH}_2\text{O}$  (2)  $\text{C}_6\text{H}_{12}\text{O}_6$   
(3)  $\text{C}_{12}\text{H}_{22}\text{O}_{11}$  (4)  $\text{CH}_3\text{COOH}$

57. Select the correct statement(s) :

- (I) All molecules of a compound have same type of atoms.  
(II) A compound retains the physical properties of its constituent elements.  
(III) The ratio of atoms of different elements in a compound is fixed.

Select the correct option :

- (1) Only (I) & (II) (2) Only (III)  
(3) Only (III) (4) (I), (II) & (III)

58. The number of molecules of  $\text{CaCO}_3$  present in 100 mL of 0.01M  $\text{CaCO}_3$  solution is

- (1)  $6.022 \times 10^{22}$  (2)  $6.022 \times 10^{20}$   
(3)  $6.022 \times 10^{26}$  (4)  $6.022 \times 10^{18}$

59. The concentration of glucose in blood is  $0.8 \text{ g L}^{-1}$ , the molarity of glucose in the blood should be

- (1)  $5.5 \times 10^{-3} \text{ M}$  (2)  $4.4 \times 10^{-5} \text{ M}$   
(3)  $5.5 \times 10^{-5} \text{ M}$  (4)  $4.4 \times 10^{-3} \text{ M}$

60. Which of the following contains maximum number of atoms

- (1) 1.6 g  $\text{CH}_4$  (2) 1.7 g  $\text{NH}_3$   
(3) 1.8 g  $\text{H}_2\text{O}$  (4) 3.4 g  $\text{H}_2\text{O}_2$

61. Which of the following is not a balanced chemical equation?

- (1)  $\text{MnO}_2 + 4\text{HCl} \xrightarrow{\Delta} \text{MnCl}_2 + 2\text{H}_2\text{O} + \text{Cl}_2$   
(2)  $4\text{NH}_3 + 5\text{O}_2 \xrightarrow[\Delta]{\text{Pt}} 4\text{NO} + 6\text{H}_2\text{O}$   
(3)  $4\text{Fe(s)} + 3\text{O}_2(\text{g}) \rightarrow 2\text{Fe}_2\text{O}_3$   
(4)  $\text{CaCO}_3(\text{s}) + 2\text{HCl}(\text{aq}) \rightarrow \text{CaCl}_2(\text{aq}) + \text{CO}_2(\text{g})$

62. Equal amounts of solutions of NaOH having concentration 10% (wt/wt) and 20% (wt/wt) are mixed. What will be molality of the NaOH in the resulting solution?

- (1) 1.5 m (2) 4.4 m  
(3) 3.0 m (4) 0.15 m

63. Which of the following has no unit?

- (1) Molality (2) Molarity  
(3) Mole fraction (4) Normality

64. The mole fraction of carbon in diamond is

- (1) 0.4 (2) 0.3  
(3) 0.2 (4) 1

65. The percentage abundance of isotopes of copper,  $^{63}_{29}\text{Cu}$  and  $^{65}_{29}\text{Cu}$  are 69% and 31% respectively. The average atomic mass of Cu would be

- (1) 63.95 (2) 63.42  
(3) 63.2 (4) 63.62

66. An organic compound is composed of 4.58% H, 40.92% C and 54.50% oxygen. What would be the empirical formula of the compound?

- (1)  $\text{C}_3\text{H}_4\text{O}_3$  (2)  $\text{C}_3\text{H}_5\text{O}$   
(3)  $\text{C}_4\text{H}_8\text{O}$  (4)  $\text{CH}_2\text{O}$

67. A solid element forms gaseous oxide without change in volume. If vapour density of oxide is 32, what is the equivalent weight of solid element?

- (1) 8 (2) 12  
(3) 16 (4) 24

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68. The mass of one twelfth of the mass of one carbon-12 atom is  
 (1)  $1.66 \times 10^{-24}$  g (2) 1.008 g  
 (3) 12 g (4)  $3.66 \times 10^{-24}$  g
69. A solution is prepared by adding 4g of a substance 'A' and 6g of a substance 'B' to 30 g of water. What is the mass percentage of 'B' in the solution?  
 (1) 10% (2) 20%  
 (3) 15% (4) 13.33%
70. Which of the following is the best way to express concentration of a liquid solution which is not affected by temperature?  
 (1) Molarity (2) Normality  
 (3) Mole-fraction (4) All of these
71. Molarity of NaOH in 200 mL of an aqueous solution of it is 1M, find the change in molarity if 2g of NaOH is added to it.  
 (1) 1.25 M (2) 0.25 M  
 (3) 0.50 M (4) 0.75 M
72. An organic compound contains 50% oxygen and 12.5% hydrogen by mass, then mole fraction of hydrogen in the compound would be  
 (1)  $\frac{4}{5}$  (2)  $\frac{2}{3}$   
 (3)  $\frac{3}{4}$  (4)  $\frac{1}{5}$
73. Calcium carbonate reacts with HCl to give  $\text{CaCl}_2$  and  $\text{CO}_2$  according to the reaction:  
 $\text{CaCO}_3(\text{s}) + 2\text{HCl}(\text{aq}) \rightarrow \text{CaCl}_2(\text{aq}) + \text{CO}_2(\text{g}) + \text{H}_2\text{O}(\text{l})$   
 What mass of 20% impure  $\text{CaCO}_3$  is required to react completely with 250 mL of 0.50 M HCl?  
 (1) 6.25 g (2) 5 g  
 (3) 4.75 g (4) 7.8 g
74. What volume of 63%  $\text{HNO}_3$  (wt/wt) having density  $1.4 \text{ g mL}^{-1}$  is required to prepare 200 mL of 0.7M  $\text{HNO}_3$  solution?  
 (1) 20 mL (2) 40 mL  
 (3) 15 mL (4) 10 mL
75. If x g of a solute having molar mass M g/Mole is present in y g of solution, then molality of x in the solution should be  
 (1)  $\frac{1000x}{M \times y}$  (2)  $\frac{1000x}{M(y-x)}$   
 (3)  $\frac{1000y}{M \times x}$  (4)  $\frac{1000y}{M(x-y)}$
76. The total number of electrons present in 16g  $\text{CH}_4$  is  
 (1)  $5 N_A$  (2)  $10 N_A$   
 (3)  $16 N_A$  (4)  $15 N_A$
77. Choose the incorrect match.  
 (1) Copper : Element  
 (2) Diamond : Compound  
 (3) Air : Mixture  
 (4) Oxygen : Gas
78. Milk is an example of  
 (1) Pure substance  
 (2) Heterogeneous mixture  
 (3) Compound  
 (4) All of these
79. Consider the following two unbalanced reactions:  
 $\text{KClO}_3 \xrightarrow{\Delta} \text{KCl} + \text{O}_2$   
 $\text{Mg} + \text{O}_2 \xrightarrow{\Delta} \text{MgO}$   
 The number of moles of MgO produced when oxygen produced by 1 mole of  $\text{KClO}_3$  is completely reacted with Mg is  
 (1) 1 mole (2) 2 mole  
 (3) 3 mole (4) 4 mole
80. The vapour density of a mixture of  $\text{NO}_2$  and  $\text{N}_2\text{O}_4$  is 39 at  $25^\circ\text{C}$ . What is the mass of  $\text{NO}_2$  present in 100 g of the mixture?  
 (1) 17.9 g (2) 8.4 g  
 (3) 33.2 g (4) 66.4 g

Space for Rough Work



Test - 1 (Code-C)

A.I.I. India Aakash Test Series for Medical-2017

81. A gas mixture of 6L of propane and butane on complete combustion at 25° C produced 20L CO<sub>2</sub>(g). The volume of butane present initially in the mixture is

- (1) 2 L (2) 3 L  
(3) 4 L (4) 3.5 L

82. A compound contains 0.5% of S. If the number of 'S' atom present per molecule is 2, then the molecular mass of the compound is

- (1) 1600 (2) 12800  
(3) 6400 (4) 3200

83. Which of the following will contain maximum number of molecules?

- (1) 100L CO<sub>2</sub>(g) at NTP  
(2) 10g of H<sub>2</sub>(g) at NTP  
(3) 1L of H<sub>2</sub>O(l)  
(4) 1000 g of C<sub>12</sub>H<sub>22</sub>O<sub>11</sub>(s) at NTP

84. Which of the following is correct for concentrated and diluted solution of same substance?

- (1)  $M_1V_1 + M_2V_2 = M(V_1 + V_2)$   
(2)  $M_1V_1 = M_2V_2$   
(3)  $2M_1V_1 = (V_1 + V_2)M$   
(4)  $M_1V_1 - M_2V_2 = M(V_1 + V_2)$

85. 8 g of a metal oxide contains 3.2 g of oxygen, then oxide can be

- (1) Na<sub>2</sub>O (2) CaO  
(3) MgO (4) Li<sub>2</sub>O

86. Volume of 1 mole of an ideal gas can be

- (1) 22.4 L (2) 11.2 L  
(3) 100 L (4) All of these

87. If the molecular formula of fructose is C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>, then its empirical formula mass would be

- (1) 6 (2) 30  
(3) 60 (4) 18

88. Molarity of 500 g of pure water is

- (1) 55.5 M (2) 27.7 M  
(3) 5 M (4) 500 M

89. The SI unit of amount of substance is

- (1) Mole (2) m  
(3) Mol (4) u

90. Volume of 1 equivalent of O<sub>2</sub>(g) at STP is

- (1) 5.6 L (2) 11.2 L  
(3) 22.4 L (4) 20 L

[BIOLOGY]

91. How many of the given bacteria show heterotrophic mode of nutrition?

Nitrosomonas, Pseudomonas, Lactobacillus  
Chlorobium, Thiobacillus, Rhizobium

- (1) Five (2) Three  
(3) Four (4) One

92. Fill in the blanks and choose the correct option.

A. The bacterial structure is very (i), but they are very (ii) in behaviour.

B. Bacteria mainly reproduce by (iii) but sometimes under unfavourable conditions they produce (iv).

	(i)	(ii)	(iii)	(iv)
(1)	Complex	Simple	Fission	Spore
(2)	Simple	Complex	Spore	Fission
(3)	Complex	Simple	Spore	Fission
(4)	Simple	Complex	Fission	Spore

Space for Rough Work



93. Which of the following statement is correct for wall-less moneran?

- (1) Cannot live without oxygen
- (2) Possess both types of nucleic acid
- (3) Smallest cell with definite shape
- (4) Mostly saprophytes

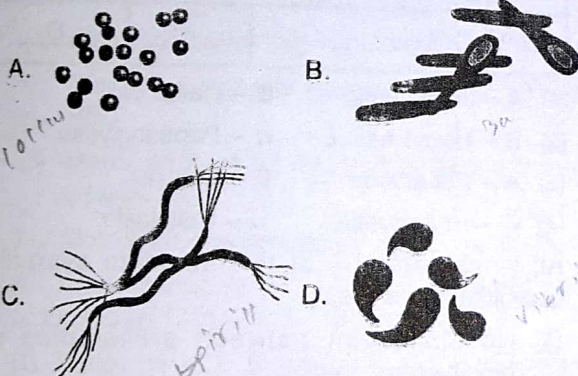
94. Read the following statements carefully and choose the incorrect statement.

- (1) Bacteria are the second largest members of kingdom monera
- (2) Cyanobacteria are unicellular, colonial or filamentous forms
- (3) Comma-shaped bacterium is vibrium
- (4) BGA often forms blooms in polluted water bodies

95. \_\_\_\_\_ are present in guts of several ruminants.

- (1) Halophiles
- (2) Cyanobacteria
- (3) Methanogens
- (4) Thermoacidophiles

96. Choose the correct option for the given below figures



- (1) A - Always non motile
- (2) B - Shape of cholera causing bacteria
- (3) C - Locomotory structure can be microtubular cilia or flagella
- (4) D - Consist of one or more spirals

97. The free living and symbiotic  $N_2$  fixing bacteria are respectively

- (1) Azotobacter; Bacillus
- (2) Azotobacter; Rhizobium
- (3) Rhizobium; Clostridium
- (4) Rhodospirillum; Anabaena

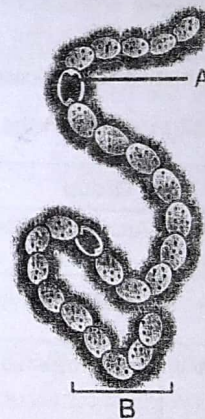
98. Identify the mismatched pair

Feature	Bacteria
(1) Most abundant in nature	Heterotrophic bacteria
(2) Making curd from milk	Rod shaped bacteria
(3) Oxidation of various inorganic substances	Chemosynthetic bacteria
(4) Oxygen evolves during photosynthesis	All photoautotrophic bacteria

99. The most common method of reproduction in bacteria involves

- (1) Transfer of DNA from one bacterium to another by virus
- (2) Syngamy and meiosis
- (3) Amitosis
- (4) Primitive type of DNA transfer

100. Identify A and B in the given diagram.



- (1) A - Heterocyst B - Filamentous BGA
- (2) A - Heterocyst B - Colonial BGA
- (3) A - Trichomatous cell B - Nostoc
- (4) A - Mucilage sheath B - Spirulina

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50



101. Cyanobacteria have ——— similar to green plants.

- (1) Cell wall (2) Reserve food  
(3) Cell structure (4) Chlorophyll pigment

102. Read the following statements carefully.

- A. Live in most harsh habitats ✓  
B. Performs oxygenic photosynthesis  
C. Lack muramic acid in cell wall ✓  
D. Has branched chain lipids in cell membrane

How many of the given statements are correct for archaebacteria?

- (1) Three (2) One  
(3) Four (4) Two

103. Which of the following features is incorrect for *Mycoplasma*

- (1) They cannot survive without oxygen  
(2) They are pathogenic to both plants and animals  
(3) They have linear double stranded DNA as genetic material  
(4) They are insensitive to penicillin

104. Choose the correct match from the given table.

	Feature	Group	Example
(1)	Monerans of hot springs	Archaebacteria	<i>Methanomonas</i>
(2)	Eubacteria of salty areas	Archaebacteria	<i>Halococcus</i>
(3)	Oxyphotobacteria performing $N_2$ reduction	Actinomycetes	<i>Frankia</i>
(4)	Filamentous bacteria with saprobic mode of nutrition	Cyanobacteria	<i>Anabaena</i>

105. How many of the diseases given below is/are caused by bacteria?

Tetanus, Influenza, Typhoid, Polio, AIDS, Small pox, Cholera, Mumps, Pneumonia, Dysentery

- (1) Two (2) Four  
(3) One (4) Three

106. According to R.H. Whittakers system of classification *Chlamydomonas* and *Spirogyra* belong to kingdom

- (1) Plantae only (2) Protista only  
(3) Protista and Plantae (4) Protista and Algae

107. Given below is the comparison of kingdom monera and protista. Fill in the blanks and choose the correct option.

S. No.	Characters	Monera	Protista
(i)	Cell type	A	Eukaryotic
(ii)	Body organisation	Cellular	B
(iii)	Cell wall	C	D

- (1) A – Prokaryotic C – Cellulosic  
(2) B – Loose tissue D – Peptidoglycan  
(3) A – Eukaryotic B – Cellular  
(4) C – Prokaryotic D – Cellulosic

108. All were demerits of two kingdom system of classification, **except**

- (1) No distinction between prokaryotes and eukaryotes  
(2) Unicellular and multicellular organisms were not differentiated  
(3) No distinction between plants and animals  
(4) Photosynthetic (green algae) and non photosynthetic (fungi) organisms were placed together

Space for Rough Work



109. In which kingdom system of classification unicellular organisms were separated from multicellular organisms irrespective of cell type?

- (1) Two kingdom (2) Three kingdom  
(3) Four kingdom (4) Five kingdom

110. Few organisms like *Pseudomonas*, *Nostoc*, Yeast and seeded plants are placed together in the same kingdom in

- (1) Two kingdom (2) Three kingdom  
(3) Five kingdom (4) Six kingdom

111. Over years, an attempt has been made to develop a classification system, which reflects similarities based on

- (I) Morphology  
(II) Physiology  
(III) Reproduction  
(IV) Phylogeny

- (1) (I) only (2) Both (I) & (II)  
(3) (I), (II) & (III) (4) (I), (II), (III) & (IV)

112. Aristotle

- (1) Classified plants into herbs, shrubs and trees  
(2) Classified animals into two groups based on RBC  
(3) Made earliest attempt of scientific basis of classification  
(4) More than one option is correct

113. All are correct for six-kingdom classification proposed by Carl Woese, **except**

- (1) Based on 16 S ribosomal RNA genes sequence  
(2) All the kingdoms are naturally clustered in three domains  
(3) Kingdom protista was separated from other eukaryotes  
(4) Kingdom monera was split into kingdom archaeobacteria and eubacteria

114. Choose the correct match.

- (1) Flora – Actual account of habitat and distribution  
(2) Monograph – Information for identification of names of different species  
(3) Manual – Alphabetical and ordered listing of species  
(4) Catalogue – Information about any one taxon

115. Read the following statements carefully and identify the taxonomic aid.

- A. Based on similarities and dissimilarities.  
B. Generally analytical in nature.  
C. Based on the contrasting characters generally in pair called couplet.

- (1) Botanical garden  
(2) Zoological park  
(3) Taxonomical key  
(4) Biological museums

116. How many of the given taxonomic aids are meant for conservation of living organisms?

Herbarium, Botanical gardens, Museums,  
Zoological parks, Flora, Manual

- (1) Two (2) Three  
(3) Four (4) Five

117. National Botanical Research Institute is located at

- (1) Howrah, W.B. (2) Lucknow, U.P.  
(3) Kew, England (4) Bangalore, Karnataka

118. Quick referral systems in taxonomic studies is

- (1) Specialised gardens with living plant specimens  
(2) Store house of collected plant specimens that are dried, pressed and preserved on sheet  
(3) Carry a label providing information only about date and place of collection  
(4) Museum

Space for Rough Work

180  
58  
122



119. Read the following statements and identify the taxonomic aids.

- (i) Collection of preserved plant and animal specimen for reference.
- (ii) Often have collection of skeletons of animals.
- (iii) Wild animals are kept in protected environment
- (iv) Insects are kept in insect boxes
- (v) Enable us to learn their food habit and behaviour

	Zoological park	Museums
(1)	(ii), (iii), (v)	(i), (iv)
(2)	(i), (ii), (iv)	(iii), (v)
(3)	(iii), (iv), (v)	(i), (ii)
(4)	(iii), (v)	(i), (ii), (iv)

120. I. Not a single step process

II. Involves hierarchy of steps arranged in certain order

Both are dealt with

- (1) Classification
- (2) Identification
- (3) Characterisation
- (4) Nomenclature

121. The lowest and highest category of classification is (respectively)

- (1) Kingdom, species
- (2) Species, kingdom
- (3) Species, genus
- (4) Phylum, Division

122. Which of the following have maximum common characters?

- (1) Felidae, Canidae
- (2) Potato, Brinjal
- (3) Carnivora, Primata
- (4) Datura, Petunia

123. Which of the following taxonomic category has maximum number of general characters?

- (1) Genus
- (2) Family
- (3) Order
- (4) Class

124. "Different taxa at same levels" is exemplified by

- (1) Animal, mammal, cat
- (2) Rice, grass, plants
- (3) Tiger, lion, leopard
- (4) Insects, primates, chordates

125. Fill in the blanks and choose the correct option

	Category	Mango	Housefly	Cat
(i)	Class	A	Insecta	D
(ii)	Order	Sapindales	C	Carnivora
(iii)	Family	B	Muscidae	E

(1) A - Dicotyledonae

B - Anacardiaceae

C - Diptera

(2) B - Solanaceae

C - Primata

D - Mammalia

(3) A - Monocotyledonae

D - Reptilia

E - Felidae

(4) A - Dicotyledonae

C - Muscidae

E - Canidae

126. Select odd one out w.r.t. polytypic genus

- (1) *Canis*
- (2) *Homo*
- (3) *Panthera*
- (4) *Solanum*

127. Modern taxonomic studies are not based on which of the following features of organisms?

- (a) External & internal structure
- (b) Fossils record
- (c) Cell structure
- (d) Phylogeny

(e) Development process

(f) Ecological informations

- (1) (b), (c), (d) & (f)
- (2) (b) & (d)
- (3) (d) & (f)
- (4) (b) & (f)

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128. Find the incorrect statement w.r.t nomenclature.

- (1) The system of naming with two components is called binomial nomenclature
- (2) Biological names are generally in Latin
- (3) Both words of biological name, when hand written underlined together
- (4) The genus name starts with capital letter whereas specific epithet starts with a small letter

129. Choose the mismatched pair.

Organism

Scientific name

- |              |                            |
|--------------|----------------------------|
| (1) Mango    | - <i>Mangifera indica</i>  |
| (2) Wheat    | - <i>Triticum aestivum</i> |
| (3) Housefly | - <i>Musca domestica</i>   |
| (4) Leopard  | - <i>Panthera tigris</i>   |

130. The term "Systematics"

- (1) Is derived from Greek word 'systema'
- (2) Was first used in species plantarum
- (3) Deals with diversity of organisms and evolutionary relationships
- (4) More than one option is correct

131. Which of the following is not the defining feature of living being?

- (1) Growth
- (2) Metabolism
- (3) Cellular organisation
- (4) Consciousness

132. Match the column.

Column-I

Column-II

- |                                |                                |
|--------------------------------|--------------------------------|
| a. <i>Planaria</i>             | (i) Spore                      |
| b. Protonema of moss           | (ii) Binary fission            |
| c. <i>Amoeba</i>               | (iii) Fragmentation            |
| d. Fungi                       | (iv) Regeneration              |
| (1) a(i), b(ii), c(iii), d(iv) | (2) a(iv), b(ii), c(iii), d(i) |
| (3) a(iv), b(iii), c(ii), d(i) | (4) a(i), b(iii), c(ii), d(iv) |

133. How many of the given characteristics of living being are shown by all organisms?

Reproduction, Cellular organisation,  
Consciousness, Self-organisation,  
Self-consciousness, Metabolism,  
Intrinsic growth

- (1) Five
- (2) Four
- (3) Six
- (4) Three

134. Read the following statements and identify them as True (T) or False (F) respectively

- A. Properties of tissue are not present in the constituent cells but arise due to interaction among them.
- B. In plants, growth by cell division occurs only up to certain age.
- C. All organisms from prokaryotes to eukaryotes can respond to external factors.

- (1) T, T, F
- (2) T, F, T
- (3) F, T, F
- (4) T, T, T

135. Choose the incorrect statement

- (1) Isolated metabolic reactions occurring *In vitro* are not living things but surely living reactions
- (2) Reproduction is an all-inclusive defining property of living being
- (3) Irritability is the most obvious and technically complicated defining property of living being
- (4) The living organisms are self-replicating, evolving and self regulating interactive systems

136. Match list-I (class) with list-II (example) and select the correct answer using the codes given below the lists.

List-I

List-II

- |                                |                                |
|--------------------------------|--------------------------------|
| a. Scaphopoda                  | (i) <i>Loligo</i>              |
| b. Cephalopoda                 | (ii) <i>Unio</i>               |
| c. Gastropoda                  | (iii) <i>Dentalium</i>         |
| d. Bivalvia                    | (iv) <i>Pila</i>               |
| (1) a(i), b(ii), c(iii), d(iv) | (2) a(ii), b(i), c(iv), d(iii) |
| (3) a(ii), b(i), c(iii), d(iv) | (4) a(iii), b(i), c(iv), d(ii) |

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## Test - 1 (Code-C)

137. All of the following animals show bioluminescence, **except**

- (1) *Pleurobrachia* (2) *Aurelia*  
(3) *Ctenoplana* (4) *Metridium*

138. Alimentary canal is completely absent in

- (1) *Taenia* (2) *Fasciola*  
(3) *Ascaris* (4) *Pheretima*

139. Consider the following characters.

- (a) Symmetry  
(b) Origin of mouth  
(c) Metameric segmentation  
(d) Type of coelom

If basic differences are to be found between *Asterias* and *Nereis*, consideration of which of the above characteristics will differentiate these animals?

- (1) (a) only  
(2) (b) & (c) only  
(3) (a), (b) & (c) only  
(4) (a), (b), (c) & (d)

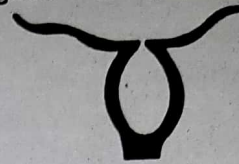
140. Choose the option that **correctly** matches the organism with its characteristic feature.

- (1) *Obelia* – Diploblastic animal with metagenesis  
(2) *Fasciola* – Flame cells for removal of undigested food and sucker for attachment to host body  
(3) *Hydra* – Fresh water inhabitant and has cnidoblast in inner layer of body wall  
(4) *Spongilla* – Its habitat is fresh water and commonly called bath sponge

141. Select the mismatch.

- (1) *Doris* – Sea lemon  
(2) *Sepia* – Cuttle fish  
(3) *Pheretima* – Clam worm  
(4) *Ophiura* – Brittle star

142. Identify the given diagram.



Choose the statement that is **wrong** regarding the given body form

- (1) It is the dominant body form in the life cycle of *Meandrina*  
(2) It is a diploid body form  
(3) Cnidoblasts are present on tentacles and in gastrovascular cavity  
(4) It shows asexual reproduction

143. Study of the animal kingdom presents a variety of excretory structures. Which one of the following is an **incorrect** match of organism and its excretory structure?

- (1) *Hirudinaria* – Nephridia  
(2) *Taenia* – Flame cell  
(3) *Laccifer* – Malpighian tubules  
(4) *Pinctada* – Coxal gland

144. All of the following animals bear suckers, **except**

- (1) *Pontobdella* (2) *Schistosoma*  
(3) *Ascaris* (4) *Fasciola*

145. Complete the following analogy Chitinous exoskeleton : *Apis* :: Calcareous ossicles : \_\_\_\_\_

- (1) *Pila* (2) *Antedon*  
(3) *Scypha* (4) *Bombyx*

146. Consider the following characters

- (a) Respiration is by book lungs  
(b) Excretion is by coxal gland  
(c) Triploblastic and segmented animal  
(d) Circulatory system is of open type

Which one of the following animals has all the above characters?

- (1) *Buthus* (2) *Limulus*  
(3) *Culex* (4) *Locusta*

Space for Rough Work

*Chitinous*



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147. From the animals listed below, mark the one whose ectoderm and endoderm are completely lined by mesoderm

- (1) *Cliona* (2) *Fasciola*  
 (3) *Ancylostoma* (4) *Chiton*

148. Mark the character that is found in members of group Bilateria

- (1) A single transverse plane passing through center divides organism into two equal halves  
 (2) Most have distinctly developed head  
 (3) All exhibit only sexual reproduction with indirect development  
 (4) All have a true coelom

149. Presence of mantle is the characteristic feature of

- (1) *Chaetopleura* (2) *Chaetopterus*  
 (3) *Echinus* (4) *Nereis*

150. Animal with intracellular digestion, indirect development and lacking symmetry is

- (1) *Spongilla* (2) *Hydra*  
 (3) *Meandrina* (4) *Sepia*

151. *Aplysia* can change the colour according to the colour of sea weed on which it lies. It is commonly known as

- (1) Sea mussel (2) Sea hare  
 (3) Sea lemon (4) Sea lily

152. Aristotle's lantern is the masticatory apparatus of organism called sea urchin that belongs to class

- (1) Crinoidae (2) Asteroidae  
 (3) Echinoidae (4) Ophiuroidea

153. Read the following statement

"The mouth contains a file like rasping organ for feeding"

The given statement is **correct** for

- (1) *Adamsia* (2) *Spondylus*  
 (3) *Octopus* (4) *Pleurobrachia*

154. Select the **incorrect** match w.r.t. the animal and its larva.

Animal	Larva
(1) <i>Obelia</i>	- Planula
(2) <i>Taenia</i>	- Cysticercus
(3) <i>Unio</i>	- Glochidium
(4) <i>Leucosolenia</i>	- Amphiblastula

155. Mark the correct statement

- (1) Nerve cord is dorsal to notochord  
 (2) Notochord is dorsal to nerve cord  
 (3) Notochord is solid and ectodermal in origin  
 (4) Nerve cord is mesodermally derived and solid

156. Ecdysis is observed in all, except

- (1) *Ancylostoma*  
 (2) *Periplaneta*  
 (3) *Pheretima*  
 (4) More than one option is correct

157. Find out the **mismatched** pair

- (1) *Asterias* - It is dioecious and has external fertilisation  
 (2) *Cucumaria* - It has indirect development and water vascular system  
 (3) *Pila* - It bears muscular foot for locomotion and has radula for feeding  
 (4) *Antedon* - It has bilateral symmetry and organ of Bojanus for excretion

158. All of the following given animals have internal fertilization, **except**

- (1) *Ascaris* (2) *Locusta*  
 (3) *Ophiura* (4) *Culex*

Space for Rough Work

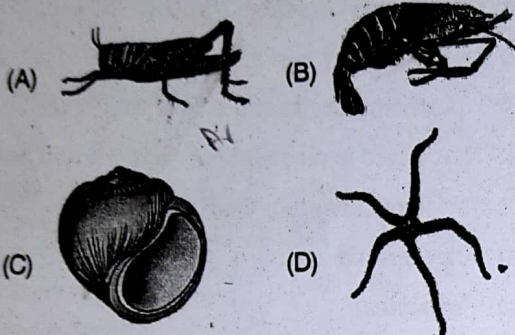


## Test - 1 (Code-C)

159. Select the option which includes animals that lack tissues.

- (1) *Physalia*, *Adamsia*, *Spongilla*  
 (2) *Ctenoplane*, *Schistosoma*, *Meandrina*  
 (3) *Pennatula*, *Gorgonia*, *Cestum*  
 (4) *Cliona*, *Chalina*, *Leucosolenia*

160. The figures show four animals A, B, C and D. Select the correct answer with respect to characteristics of two of these animals



- (1) (A) and (C) have chitinous exoskeleton  
 (2) (B) and (C) have deuterostomic body plan  
 (3) (B) and (D) have bilateral symmetry  
 (4) (A) and (B) have jointed appendages

161. Choose the **incorrect** option w.r.t. the given animal



- (1) It is fresh water inhabitant and asymmetrical animal  
 (2) It has water transport or canal system  
 (3) Fertilisation is internal and development is indirect  
 (4) Sexes are separate

162. Earliest appearance of only internal segmentation in course of evolution was seen in

- (1) Annelids (2) Arthropods  
 (3) Mollusca (4) Vertebrates

163. A primitive arthropod represents a sort of connecting link between annelida and arthropoda. Which one of the following is **correct**?

- (1) *Neopilina*  
 (2) *Peripatus*  
 (3) *Limulus*  
 (4) More than one option is correct

164. The infective juvenile of *Ascaris* moults for the second time to form third larva. Where does this moult occur?

- (1) In the alveoli of lungs of the host  
 (2) In the intestine of host  
 (3) In hepatic portal vein  
 (4) In soil outside the host body

165. Select the **incorrect** matching of animal phylum their symmetry, organisation and coelom

	Animal phylum	Symmetry	Organisation	Coelom
(1)	Echinodermata	Radial	Organ system	Eucoelom
(2)	Arthropoda	Bilateral	Organ system	Enterocoelom
(3)	Coelenterata	Radial	Tissue	Acoelomata
(4)	Annelida	Bilateral	Organ system	Schizocoelom

166. Arthropods can be differentiated from annelids by presence of

- (1) Closed circulatory system  
 (2) Presence of nephridia  
 (3) Ventral nerve cord  
 (4) Chitinous exoskeleton

Space for Rough Work



167. Which of the following is **correct** identification of the organism illustrated in the figure and its characteristics mentioned?

## Organisms

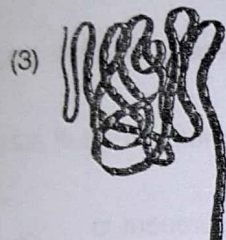
## Characteristics



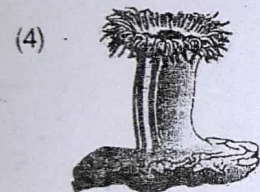
- It is free swimming, radially symmetrical animal and it exhibits metagenesis



- Adults are radially symmetrical but the larvae are bilaterally symmetrical, sexes are separate



- Bilaterally, symmetrical, triploblastic and pseudo coelomate animal



- Sessile animal triploblastic and cnidoblast are present on tentacles

168. Which of the following is infective stage for primary host of *Fasciola hepatica*?

- (1) Miracidium larva (2) Sporocyst larva  
(3) Metacercaria larva (4) Cercaria larva

169. Which one is **incorrect** match?

- (1) Vector - *Culex*  
(2) Gregarious pest - *Locusta*  
(3) Living fossil - *Limulus*  
(4) Economically beneficial insect - Aphid

170. Which of the following is not a defining character of animals?

- (1) Multicellularity  
(2) Heterotrophs  
(3) Presence of cell wall  
(4) Definite growth pattern

171. Which of the following is **not** a matching pair of an animal and a certain phenomenon it exhibits?

## Animal

## Phenomenon

- |                      |                        |
|----------------------|------------------------|
| (1) <i>Obelia</i>    | - Metagenesis          |
| (2) <i>Spongilla</i> | - Indirect development |
| (3) <i>Lepisma</i>   | - Bioluminescence      |
| (4) <i>Taenia</i>    | - Apolysis             |

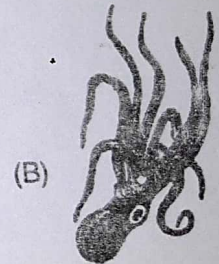
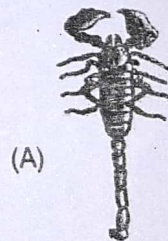
172. Which of the following is not a matching set of phylum and its three examples?

- (1) Platyhelminthes - *Schistosoma*, *Planaria*, *Fasciola*  
(2) Annelida - *Polygordius*, *Nereis*, *Pheretima*  
(3) Echinodermata - *Asterias*, *Antedon*, *Cucumaria*  
(4) Mollusca - *Pinctada*, *Aplysia*, *Chaetopterus*

173. From option given below, choose the earliest protostomes with haemocoel and unsegmented body is

- (1) *Pinctada* (2) *Pheretima*  
(3) *Saccoglossus* (4) *Pontobdella*

174. Choose the **correct** statement w.r.t (A) or (B)



- (1) A - Closed circulatory system  
(2) A - Eumetamerism  
(3) B - Presence of dorsal nerve cord  
(4) B - Presence of calcareous shell

Space for Rough Work



175. Difference between jelly fish and comb jellies include

- (1) Absence of metagenesis
- (2) Presence of cnidoblast
- (3) Extracellular and intracellular digestion
- (4) Bioluminescence

176. Pseudocoelom is present in all given animals, except

- (1) Roundworm
- (2) Pinworm
- (3) Ringworm
- (4) Whipworm

177. Which of the following endoparasites of humans does show viviparity?

- (1) *Enterobius vermicularis*
- (2) *Hirudinaria granulosa*
- (3) *Trichinella Spiralis*
- (4) *Necator americanus*

178. Read the following statements

- (a) Presence of compound eye
- (b) Body is divided into head, thorax and abdomen
- (c) Presence of jointed appendages
- (d) Presence of sensory antenna
- (e) Presence of haemocoel

How many of the given statements are common for spider and *Culex*?

- (1) Three
- (2) Two
- (3) Four
- (4) Five

179. Read the statements given below and mark correct one.

- (1) All animals with radial symmetry in adult stage are diploblastic
- (2) All animals with radial symmetry in adult stage always exhibit metagenesis
- (3) All animals with radial symmetry in adult stage have ventral nerve cord
- (4) All animals with radial symmetry in adult stage have a heterotrophs

180. Statocyst as balancing organ is present in

- (1) *Ctenoplane*
- (2) *Aedes*
- (3) *Apis*
- (4) *Ascaris*



Space for Rough Work